

(1) *Smoke emission in waves.* The signal shall be ignited and thrown overboard under conditions where the waves are at least 30 cm (1 ft.) high. The smoke emitting time must be at least 4 minutes and the signal shall float in such a manner that the signal shall function properly during this test. Failure to pass this test shall be cause for the lot to be rejected.

(2) *Underwater smoke emission.* Condition each sample in accordance with paragraph (c)(2)(i) of this section. Ignite specimen and let it burn about 15 seconds in air. Submerge the burning signal in water in a vertical position with head down. Obtain underwater smoke emission time by stop watch measurements from time of submersion until distinct, sustained smoke emission ceases. The test specimen shall emit smoke underwater not less than 15 seconds when subjected to this test.

(3) *Elevated temperature, humidity, and storage.* Place specimen in a thermostatically controlled even-temperature oven held at 75 °C. with not less than 90 percent relative humidity for 72 hours. Remove specimen and store at room temperature (20° to 25 °C.) with approximately 65 percent relative humidity for ten days. If for any reason it is not possible to operate the oven continuously for the 72-hour period, it may be operated at the required temperature and humidity for 8 hours out of each 24 during 72-hour conditioning period. (Total of 24 hours on and 48 hours off). The signal shall not ignite or decompose during this conditioning. The signal shall ignite and operate satisfactorily following this conditioning.

(4) *Spontaneous ignition.* Place the specimen in a thermostatically controlled even-temperature oven held at 75 °C. with not more than 10% relative humidity for 48 consecutive hours. The signal shall not ignite or undergo marked decomposition.

(5) *Susceptibility to explosion.* Remove smoke composition from signal and punch a small hole in the composition. Insert a No. 6 commercial blasting cap. Ignite the cap. The test specimen shall not explode or ignite.

(6) *Corrosion resistance.* Expose the complete specimen with cover secured

hand-tight to a finely divided spray of 20 percent by weight sodium chloride solution at a temperature between 32 °C and 38 °C (90 °F and 100 °F) for 100 hours. The container and cap must not be corroded in any fashion that would impair their proper functioning.

(7) *Color of smoke.* Ignite specimen in the open air in daytime according to the directions printed on the signal, and determine the smoke color by direct visual comparison of the unshadowed portions of the smoke with a color chart held so as to receive the same daylight illumination as the unshadowed portions of the smoke. The color of the smoke must be orange as defined by Sections 13 and 14 of the "Color Names Dictionary" (colors 34-39 and 48-54).

(8) *Volume and density of smoke.* The test specimen shall show less than 20 percent transmission for not less than 3 minutes when measured with apparatus having a light path of 19 cm (7½ in.), an optical system aperture of +3.7 degrees, and an entrance air flow of 18.4m³ per minute (650 cu. ft. per minute), such apparatus to be as described in National Bureau of Standards Report No. 4792.

§ 160.022-5 Marking.

(a) *Directions for use.* Each floating orange smoke distress signal shall be plainly and indelibly marked in black lettering not less than 3 mm (⅛ in.) high "Approved for daytime use only", and in black lettering not less than 5 mm (⅜ in.) high with the word "Directions". Immediately below shall be similarly marked in black lettering not less than 3 mm (⅛ in.) high: "1. Use Only When Aircraft or Vessel Is Sighted". Then in numbered paragraphs, in similar lettering, there shall follow in simply and easily understood wording, instructions to be followed to make the device operative. Pasted-on labels are not acceptable.

(b) *Other markings.* (1) There shall be embossed or die-stamped, in the outer container in figures not less than 5 mm (⅜ in.) high, numbers, indicating the month and year of manufacture, thus: "6-54" indicating June 1954. The outer container shall also be plainly and indelibly marked with the commercial designation of the signal, the words

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“Floating Orange Smoke Distress Signal”, name and address of the manufacturer, the Coast Guard Approval No., the service life expiration date (month and year to be entered by the manufacturer), the month and year of manufacture and the lot number.

(2) In addition to any other marking placed on the smallest packing carton or box containing floating orange smoke distress signals, such cartons or boxes shall be plainly and indelibly marked to show the service life expiration date, the month and year of manufacture, and the lot number.

(3) The largest carton or box in which the manufacturer ships signals must be marked with the following or equivalent words: “Keep under cover in a dry place.”

(c) *Marking of expiration date.* The expiration date must be not more than 42 months from the date of manufacture.

NOTE: Compliance with the labeling requirements of this section does not relieve the manufacturer of the responsibility of complying with the label requirements of 15 U.S.C. 1263, the Federal Hazardous Substances Act.

§ 160.022-7 Procedure for approval.

(a) Signals are approved by the Coast Guard under the procedures in subpart 159.005 of this chapter.

(b) [Reserved]

Subpart 160.023—Hand Combination Flare and Smoke Distress Signals

SOURCE: CGD 76-048a and 76-048b, 44 FR 73070, Dec. 17, 1979, unless otherwise noted.

§ 160.023-1 Incorporation by reference.

(a) The following are incorporated by reference into this subpart:

(1) Military specifications MIL-S-18655 C, 3 May 1971—Signal, Smoke and Illumination, Marine, Mark 13, Mod 0.

(b) The military specification may be obtained from Customer Service, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA. 19120 (tel: (215)697-2000). This specification is also on file in the Federal Register library.

(c) Approval to incorporate by reference the materials listed in this section was obtained from the Director of

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the Federal Register on November 1, 1979.

§ 160.023-2 Type.

(a) Hand combination flare and smoke distress signals specified by this subpart shall be of the type described in specification MIL-S-18655.

(b) [Reserved]

§ 160.023-3 Materials, workmanship, construction, and performance requirements.

(a) The materials, construction, workmanship, general and detail requirements shall conform to the requirements of specification MIL-S-18655, except as otherwise specifically provided by this subpart.

(b) [Reserved]

§ 160.023-4 Approval and production tests.

(a) *Approval tests.* The approval tests are those tests prescribed for the preproduction sample in MIL-S-18655. The approval tests must be conducted by an independent laboratory accepted by the Commandant under § 159.010 of this chapter.

(b) *Production inspections and tests.* Production inspections and tests of each lot of signals produced must be conducted under the procedures in § 159.007 of this chapter. Signals from a rejected lot must not be represented as meeting this subpart or as being approved by the Coast Guard. If the manufacturer identifies the cause of the rejection of a lot of signals, the signals in the lot may be reworked by the manufacturer to correct the problem. Samples from the rejected lot must be retested in order to be accepted. Records shall be kept of the reasons for rejection, the reworking performed on the rejected lot, and the results of the second test.

(1) *Inspections and tests by the manufacturer.* The manufacturer's quality control procedures must include inspection of materials entering into construction of the signals and inspection of the finished signals, to determine that signals are being produced in accordance with the approved plans. The manufacturer must select samples